

State of Idaho Threat and Hazard Identification and Risk Assessment (THIRA)

Guide for Local Jurisdictions



THIRA Overview

The Threat and Hazard Identification and Risk Assessment (THIRA) process can help jurisdictions understand the unique risks they face. The process provides a logical progression to identify threats and hazards of concern, what actions are considered successful for each core capability, as well as the resources necessary to successfully accomplish their goals. Once the jurisdiction's THIRA has been completed, the information can also be used for each step of the preparedness cycle including:

- ✓ Plan development and revisions
- ✓ Identification and acquisition of needed resources
- ✓ Training and exercise series development
- ✓ Identification of additional Memorandums of Understanding (MOUs) that need to be drafted or finalized
- ✓ Allocation of grant funds and resources to prioritized capability gaps

The THIRA process is made up of 4 steps:

Step 1: Identify the threats and hazards faced by the local jurisdiction.

Step 2: Examine the vulnerability of the local jurisdiction to threats and hazards and develop plausible scenarios for those events.

Step 3: Use the scenarios to identify estimated impacts and desired outcomes for each core capability; develop capability target statements.

Step 4: Develop capability estimations identifying necessary resources for each capability target. Apply the capability targets to the preparedness cycle to increase capability and preparedness in the local jurisdiction.

Definitions:

Threat: Human caused incidents that result from intentional acts. This could include chemical, biological or cyber-attacks and other act of terrorism.

Hazard: Incidents that result from acts of nature such as floods and earthquakes. It also incorporates technological hazards that result from the failure of man-made systems such as dam failures and aircraft accidents.

Mission Area: There are five mission areas defined in the National Preparedness Goal (NPG): Prevent, Protect, Mitigate, Respond, and Recover. Each mission area is broken into specific core capabilities that help guide preparedness and response capabilities at each level of government.

Core Capability: There are 31 core capabilities under the five mission areas that help guide the execution of the National Preparedness Goal. The whole community is necessary to fully achieve proficiency in each core capability. See Appendix A for a list of the core capabilities. For definitions of each core capability, please refer to the NPG.

Step 1: Identify Threats and Hazards

Each local jurisdiction faces unique threats and hazards from natural, technological, or man-made events. All threats and hazards should be considered by the THIRA development team during the first step of the THIRA process. THIRA team members can include stakeholders from responder communities, health district, public works, private sector, Local Emergency Planning Committees (LEPC), volunteer groups, etc.

Natural Hazards: Fire, flood, earthquake, epidemics

Technological Hazards: Aircraft accidents, hazardous materials release, dam failure, power failure

Threats: Civil disturbance, cyber incidents, school violence, acts of terror

The first step in the THIRA process is to identify the threats and hazards that are faced by the local jurisdiction. Consideration should also be given to threats and hazards that could occur in bordering jurisdictions that would have impact on the surrounding area. Threat and hazard information can be gathered from a number of sources within the city, county, and state.

- ✓ All Hazard Mitigation Plans
- ✓ Emergency Operation Plans
- ✓ Local subject matter experts
- ✓ Local disaster declaration records
- ✓ Historical data
- ✓ Law enforcement records

Once threats and hazards have been identified they should be listed in rank order according to most plausible, worst case scenarios. This list will be used to select the top threats and hazards in the local jurisdiction in Step 2.

Example:

The local jurisdiction has an earthen dam, homes in the wild land urban interface, and a major state highway that commonly is used to transport hazardous material. The jurisdiction is vulnerable to wild land fires, flooding, and a cyber-attack on public information systems. According to subject matter experts and historical data the threats and hazards have been ranked as follows:

1. Hazardous materials release on the state highway.
2. Wild land fire
3. Flooding
4. Dam breach
5. Cyber attack

Step 1 is complete when a list of local threats and hazards have been identified and ranked in order of priority.

Step 2: Give Threats and Hazards Context

Once the top threats and hazards have been identified and prioritized, the top threats and hazards should be selected for Step 2 - developing scenarios for the threats or hazards. It is important to keep in mind that a variety of threat and hazard scenarios created in this step will ensure each core capability is adequately stressed in Step 3. There is no requirement for number of threats and hazards. 2-3 may adequately test one local jurisdiction's capability, and 5 or more may be necessary for another jurisdiction.

A scenario should be identified for each selected threat and hazard that gives background on the event. This information could include:

- ✓ Population in the impact area
- ✓ When the event is most likely to occur
- ✓ Where the event is most likely to occur
- ✓ Time of day or year that would make the event most devastating
- ✓ Cascading impacts (power outages, hazardous materials release, evacuations, etc.)

Example:

1. Hazardous material release: A truck carrying anhydrous ammonia has wrecked on the state highway at 6:30pm. The wind is blowing 15 MPH NE towards a neighborhood 2000 yards away with a population of 250.
2. A red flag warning was issued for the area 2 hours ago. A series of dry thunderstorms just went through the area, starting multiple fires. 150 structures are currently threatened with 30 MPH winds pushing fires towards an additional 300 structures. Another storm is forecasted in the next 60 minutes with dry thunderstorms and temperatures of 80+ degrees. Fire officials are recommending the evacuation of 1800 citizens in the affected area. One major roadway has been closed because of heavy smoke. One major power line has been burned, cutting off power to half of the jurisdiction.

Step 2 is complete when a simple scenario has been identified for each of the selected top threats and hazards in the local jurisdiction.

Step 3: Establish Capability Targets

Step 3 is broken into three parts. First, the scenarios from Step 2 are used to estimate the *impact* on the community in each core capability. Next, the *desired outcomes* are identified for each core capability. Finally, the estimated impact and the desired outcome are combined to create a *capability target* statement.

Estimated Impact: Describe how the scenario would impact the jurisdiction for each core capability. One single scenario may not test each core capability, which is why multiple scenarios are used to develop the THIRA. It is important to include measureable data such as impacted populations, area impacted etc. This information will be necessary when developing capability targets and during Step 4.

Desired Outcome: Identify exactly what capability the jurisdiction wants to have for each core capability. This process will help identify the gaps in resources and ability that can be filled with planning, acquiring additional resources, training or exercises. **It is important to use measurable time frames, population numbers etc. in this description.** This step facilitates the ability to apply THIRA results to budgets and prioritization efforts in Step 4.

Capability Target: Combine the highest estimated impact and the desired outcome for each core capability. This statement defines what is considered a successful achievement for the core capability in the context of the scenario.

Once the estimated impacts and desired outcomes have been identified for each core capability for each scenario, the capability target statement is developed based on the worst case scenario. Combining the worst impact with the desired outcome produces a measurable capability target.

Example:

Core Capability	Public Information and Warning	
Scenarios	Hazardous materials release	Wild land Fire
Estimated Impacts	Evacuation orders and evacuation area will have to be communicated to 250 people in the impact area. This includes accessible forms of communication for the hearing impaired and non-English speakers.	Evacuation orders and evacuation area will have to be communicated to 1800 people in the impact area. This includes accessible forms of communication for the hearing impaired and non-English speakers.
Desired Outcomes	Notify all residents in evacuation area within 15 minutes of evacuation recommendation.	Notify all residents in evacuation area within 15 minutes of evacuation recommendation.
Capability Target (Respond)	Using accessible messaging for the hearing impaired and non-English speakers, notify 1800 residents of an evacuation notice within 15 minutes of evacuation recommendation.	
Capability Target (Mitigate)	Using accessible messaging for hearing impaired and non-English speakers, communicate wild land fire risk and vulnerability reduction activities to 1800 people.	

Step 3 is complete when capability target statements have been drafted for all 31 core capabilities

Step 4: Apply the Results

Applying the results in Step 4 involve estimating the resources necessary to achieve the Capability Target statements. Creating a list of necessary resources for each core capability will be helpful in conducting a gap analysis. The gap analysis information can then assist in prioritizing limited resources, personnel, and grant funds.

Example:

1. **Capability Target:** Using accessible messaging for the hearing impaired and non-English speakers, notify 1800 residents of an evacuation notice within 15 minutes of evacuation recommendation.
2. **Capability Estimations:** (Resources necessary for the Capability Target statement)
 - a. Add an Evacuation Plan annex to the jurisdiction Emergency Operations Plan (EOP).
 - b. Ensure mass messaging capability at the dispatch center
 - c. 20 law enforcement officers with 10 vehicles

Gap Analysis: Once a list of needed resources has been identified it can be compared to the current available resources to identify deficits in capabilities and resources. This process can help the jurisdiction identify what resources still need to be obtained or arranged for in a Memorandum of Understanding (MOU).

Prioritization: Using the list of needed resources identified in the Gap Analysis, jurisdictions can then use the information during prioritization efforts. Capability that needs to be built can be prioritized for equipment acquisitions. Capability that needs to be sustained can be identified for additional training and exercising. Top priority core capabilities and Capability Target statements and the associated resources needs should be arranged in a list from most important to least important.

Strategic Planning: Using the Gap Analysis information and the ranked list from the prioritization effort, a jurisdictional strategic plan can be drafted. This plan can encompass information from the entire THIRA process and provide tangible outcomes for the process. During the strategic planning process, objectives and tasks can be identified to assign roles and responsibilities to increase capability in line with the THIRA, Gap Analysis, and Prioritization efforts.

Step 4 is complete when capability estimations have been identified for each core capability.

Conclusion

The development of a THIRA for a local jurisdiction can inform every aspect of the Preparedness Cycle by identifying planning, equipment, and training needs. Applying the results of the THIRA through gap analysis, prioritization, and strategic planning can yield direction for budgeting, personnel, and other management decisions.

Aligning the THIRA process with the Preparedness Cycle enables local leadership to produce a prioritized list of projects and investments specifically related to the jurisdiction's requirements. Aligning plans, training, resources, and personnel to jurisdictional priorities and objectives for building and sustaining capability will eliminate waste and redundant effort. This will ensure dwindling resources are used in a strategic and targeted effort toward the jurisdiction's missions and goals.



Appendix A:

Below is a list of core capabilities by mission area. For definitions of each mission area and core capability please refer to the National Preparedness Goal.

PREVENT	PROTECT	MITIGATE	RESPOND	RECOVER
Planning	Planning	Planning	Planning	Planning
Public Information and Warning	Public Information and Warning	Public Information and Warning	Public Information and Warning	Public Information and Warning
Operational Coordination	Operational Coordination	Operational Coordination	Operational Coordination	Operational Coordination
Forensics and Attribution	Access Control and Identity Verification	Community Resilience	Critical Transportation	Economic Recovery
Intelligence and Information Sharing	Cybersecurity	Long-Term Vulnerability Reduction	Environmental Response / Health and Safety	Health and Social Services
Interdiction and Disruption	Intelligence and Information Sharing	Risk and Disaster Resilience Assessment	Fatality Management Services	Housing
Screening, Search, and Detection	Interdiction and Disruption	Threats and Hazard Identification	Infrastructure Systems	Infrastructure Systems
	Physical Protective Measures		Mass Care Services	Natural and Cultural Resources
	Risk Management for Protection Programs and Activities		Mass Search and Rescue Operations	
	Screening, Search, and Detection		On-Scene Security and Protection	
	Supply Chain Integrity and Security		Operational Communications	
			Public and Private Services and Resources	
			Public Health and Medical Services	
			Situational Assessment	